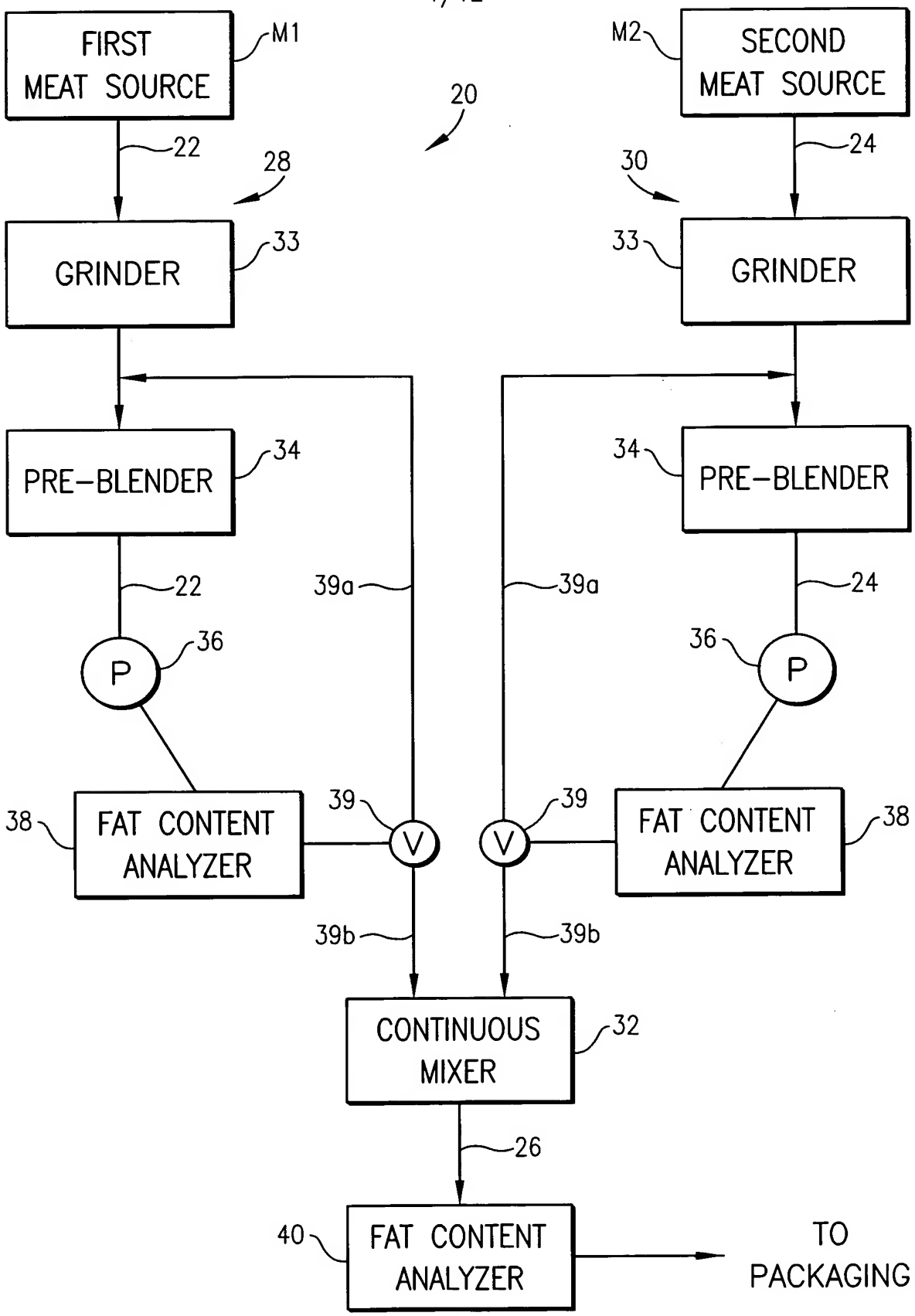
FIRST MEAT SOURCE
M1
SECOND MEAT SOURCE
M2
20
22
24
28
30
GRINDER
33
GRINDER
33
PRE-BLENDER
34
PRE-BLENDER
34
22
39a
39a
24
36
P
36
P
38
FAT CONTENT ANALYZER
39
V
V
39
FAT CONTENT ANALYZER
38
39b
39b
CONTINUOUS MIXER
32
26
40
FAT CONTENT ANALYZER
TO PACKAGING

FIG. 1

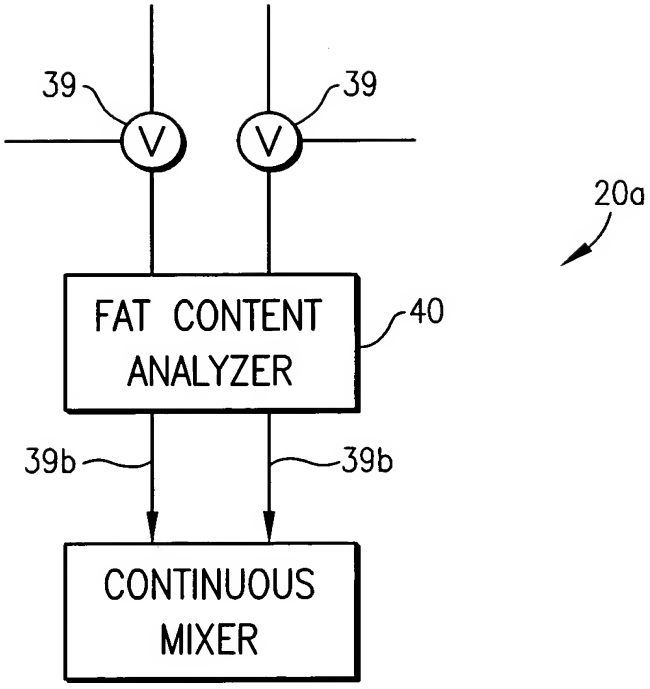
39
39
V
V
20a
FAT CONTENT ANALYZER
40
39b
39b
CONTINUOUS MIXER

FIG. 1A

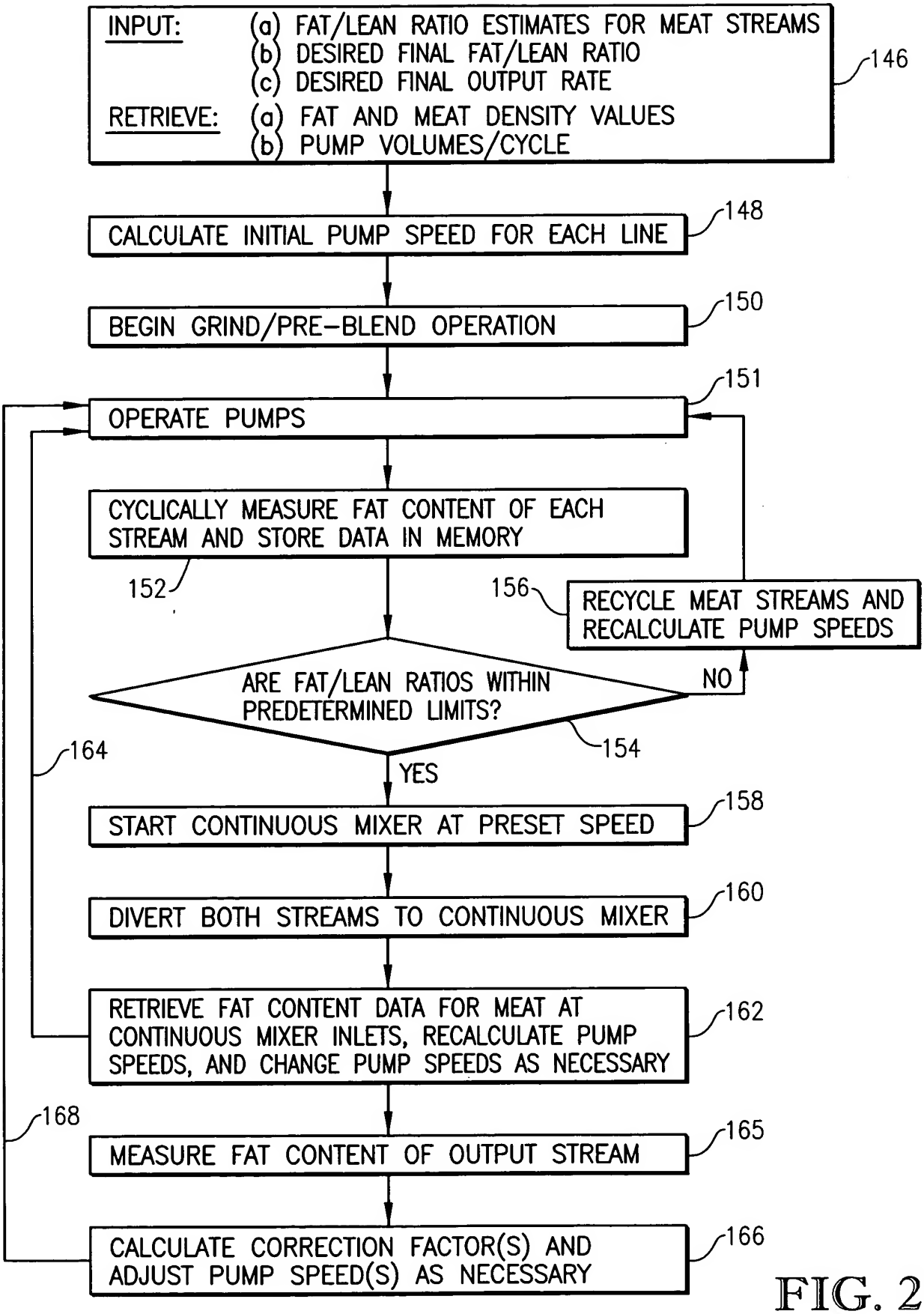
INPUT:
(a) FAT/LEAN RATIO ESTIMATES FOR MEAT STREAMS
(b) DESIRED FINAL FAT/LEAN RATIO
(c) DESIRED FINAL OUTPUT RATE
RETRIEVE:
(a) FAT AND MEAT DENSITY VALUES
(b) PUMP VOLUMES/CYCLE
146
CALCULATE INITIAL PUMP SPEED FOR EACH LINE
148
BEGIN GRIND/PRE-BLEND OPERATION
150
OPERATE PUMPS
151
CYCLICALLY MEASURE FAT CONTENT OF EACH STREAM AND STORE DATA IN MEMORY
152
156
RECYCLE MEAT STREAMS AND RECALCULATE PUMP SPEEDS
ARE FAT/LEAN RATIOS WITHIN PREDETERMINED LIMITS?
NO
154
164
YES
START CONTINUOUS MIXER AT PRESET SPEED
158
DIVERT BOTH STREAMS TO CONTINUOUS MIXER
160
RETRIEVE FAT CONTENT DATA FOR MEAT AT CONTINUOUS MIXER INLETS, RECALCULATE PUMP SPEEDS, AND CHANGE PUMP SPEEDS AS NECESSARY
162
168
MEASURE FAT CONTENT OF OUTPUT STREAM
165
CALCULATE CORRECTION FACTOR(S) AND ADJUST PUMP SPEED(S) AS NECESSARY
166

FIG. 2

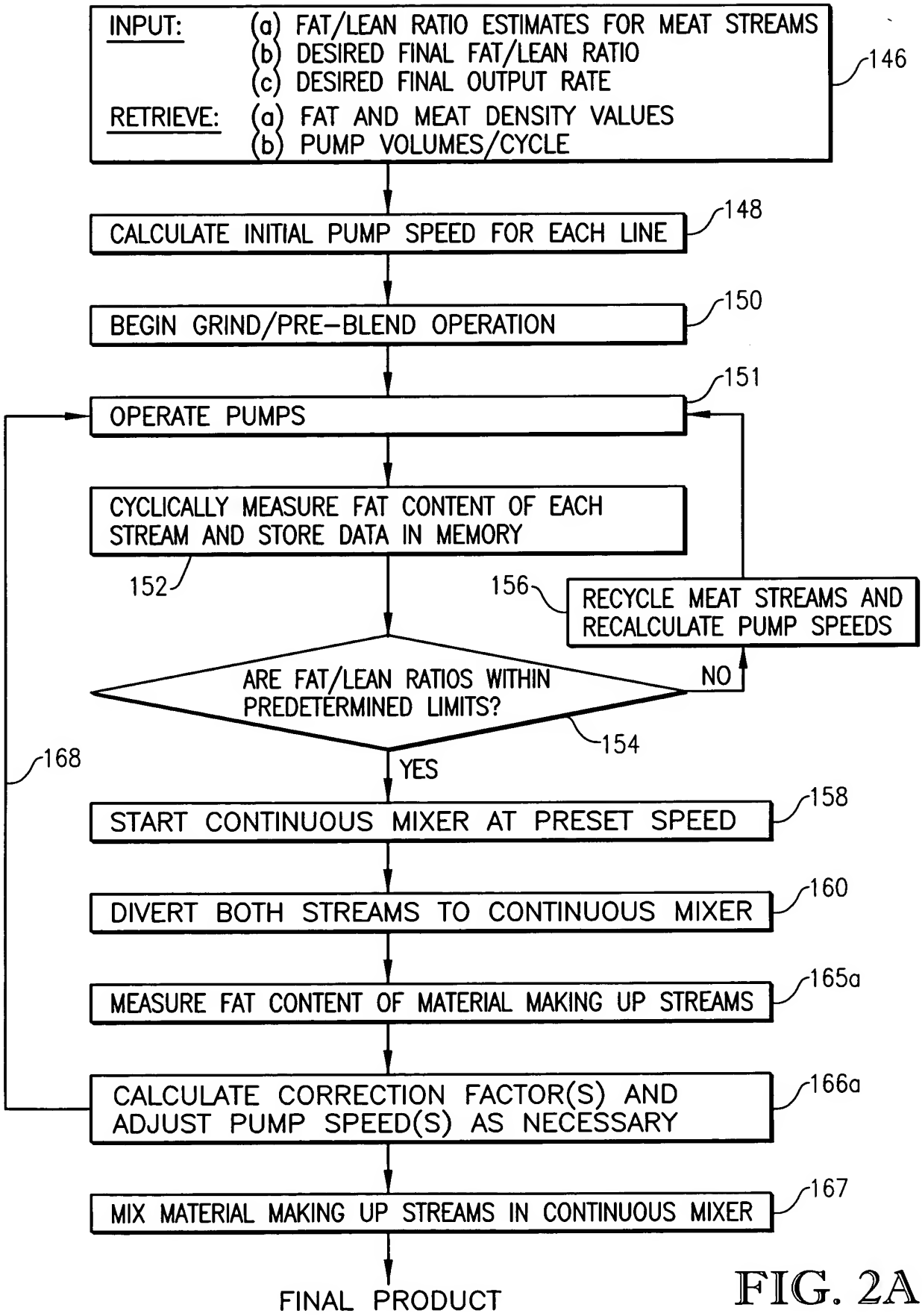
INPUT:
(a) FAT/LEAN RATIO ESTIMATES FOR MEAT STREAMS
(b) DESIRED FINAL FAT/LEAN RATIO
(c) DESIRED FINAL OUTPUT RATE
RETRIEVE:
(a) FAT AND MEAT DENSITY VALUES
(b) PUMP VOLUMES/CYCLE
146
CALCULATE INITIAL PUMP SPEED FOR EACH LINE
148
BEGIN GRIND/PRE-BLEND OPERATION
150
OPERATE PUMPS
151
CYCLICALLY MEASURE FAT CONTENT OF EACH STREAM AND STORE DATA IN MEMORY
152
RECYCLE MEAT STREAMS AND RECALCULATE PUMP SPEEDS
156
ARE FAT/LEAN RATIOS WITHIN PREDETERMINED LIMITS?
NO
154
YES
168
START CONTINUOUS MIXER AT PRESET SPEED
158
DIVERT BOTH STREAMS TO CONTINUOUS MIXER
160
MEASURE FAT CONTENT OF MATERIAL MAKING UP STREAMS
165a
CALCULATE CORRECTION FACTOR(S) AND ADJUST PUMP SPEED(S) AS NECESSARY
166a
MIX MATERIAL MAKING UP STREAMS IN CONTINUOUS MIXER
167
FINAL PRODUCT

FIG. 2A

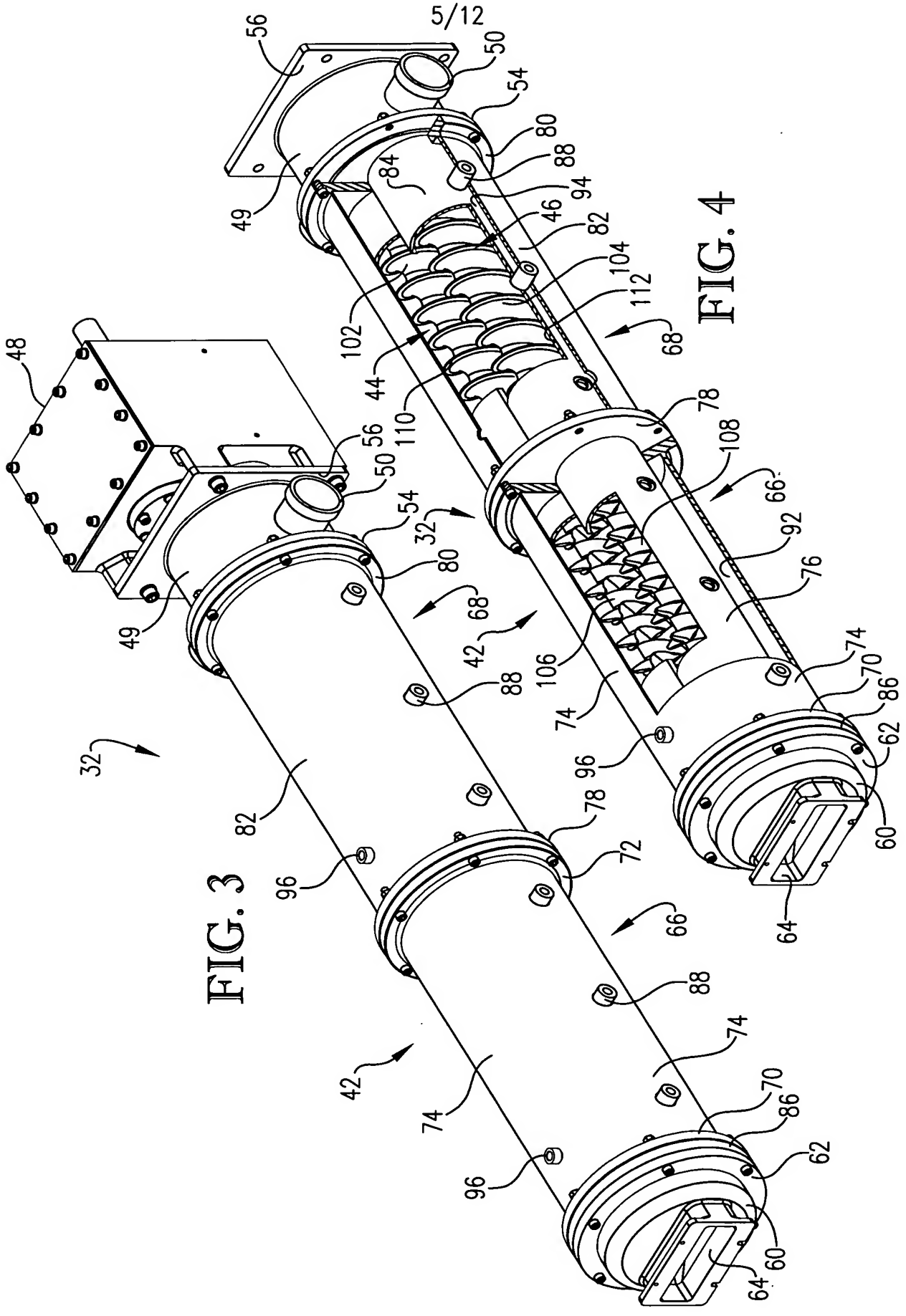
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FIG. 3

FIG. 4

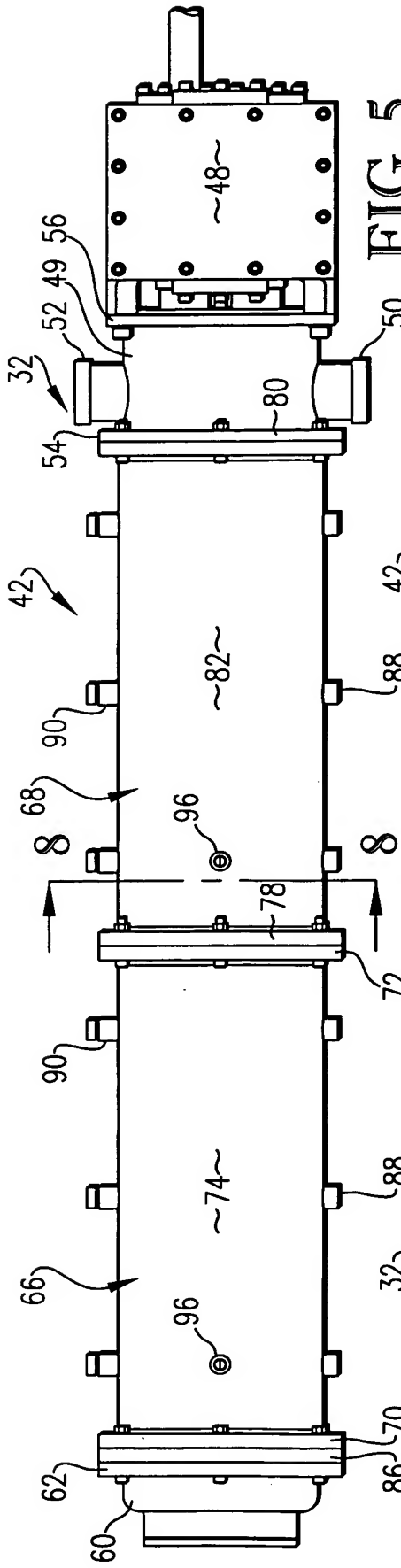

FIG. 5

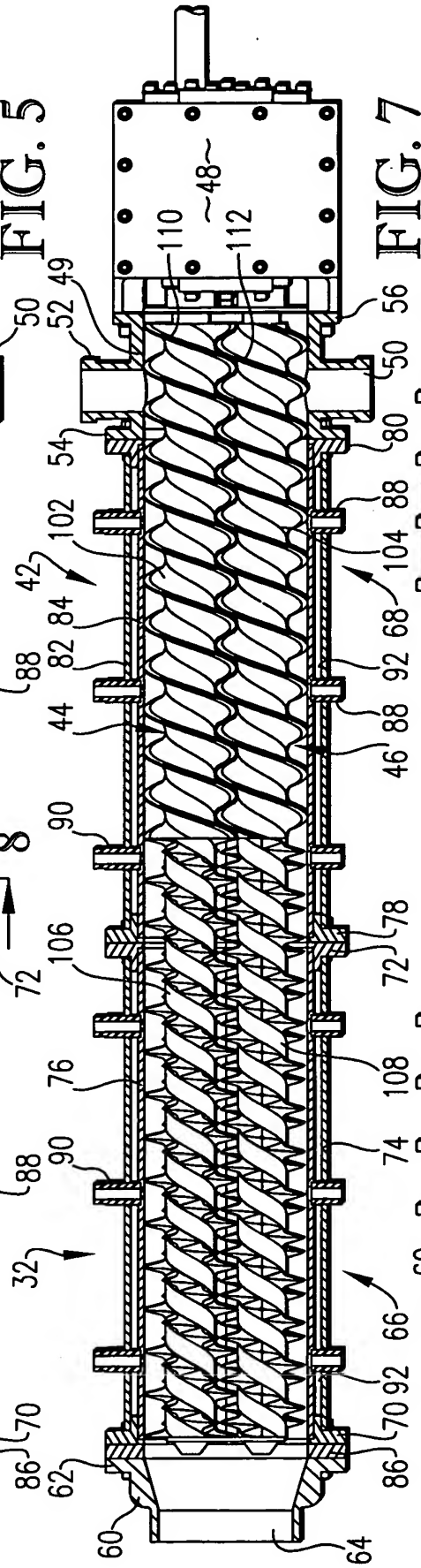

FIG. 7

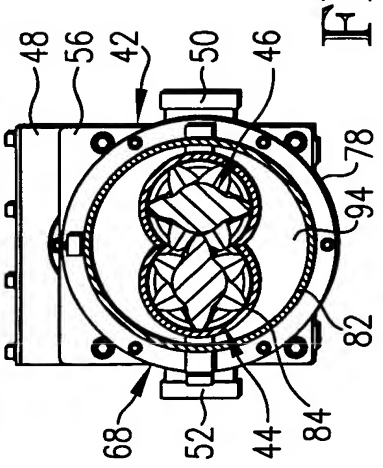

FIG. 8

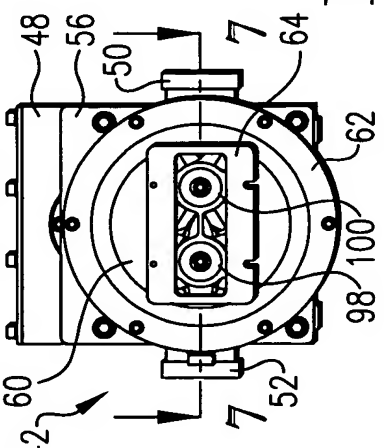

FIG. 6

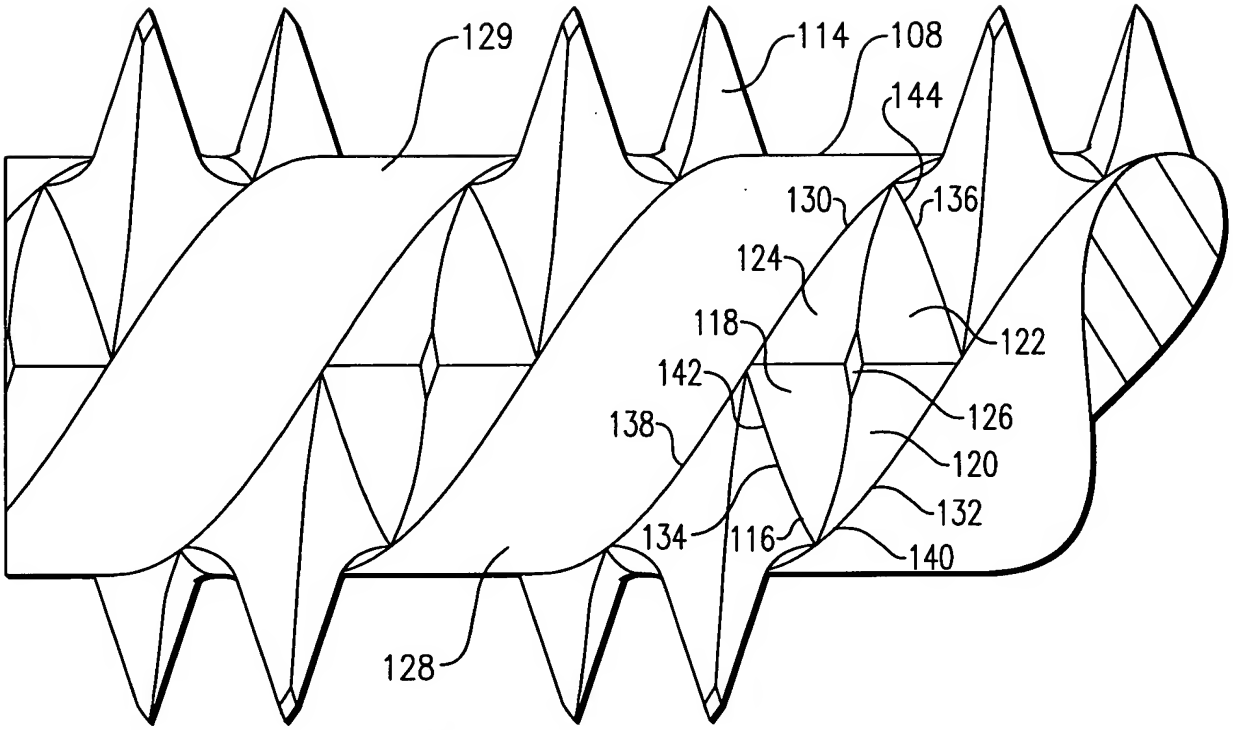
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FIG. 9

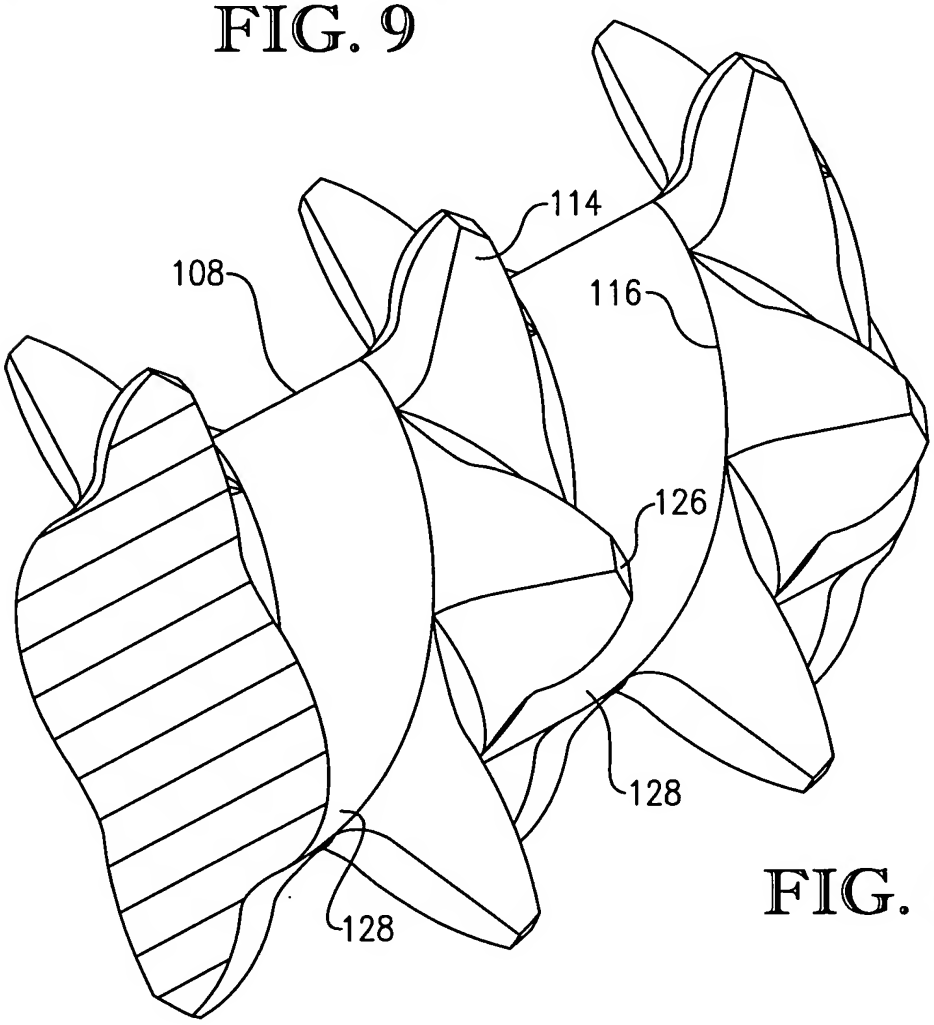
114
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FIG. 10

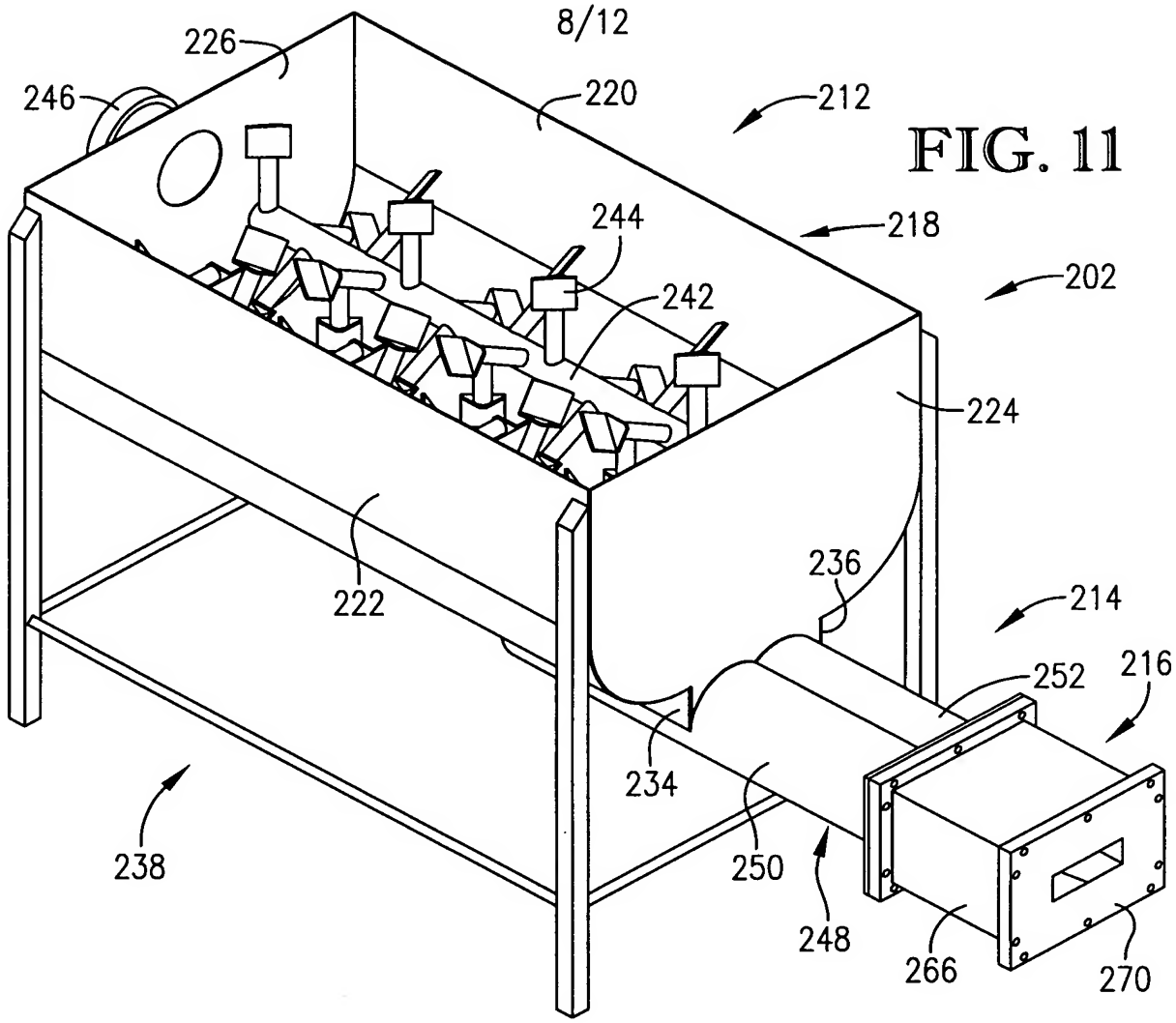
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FIG. 11

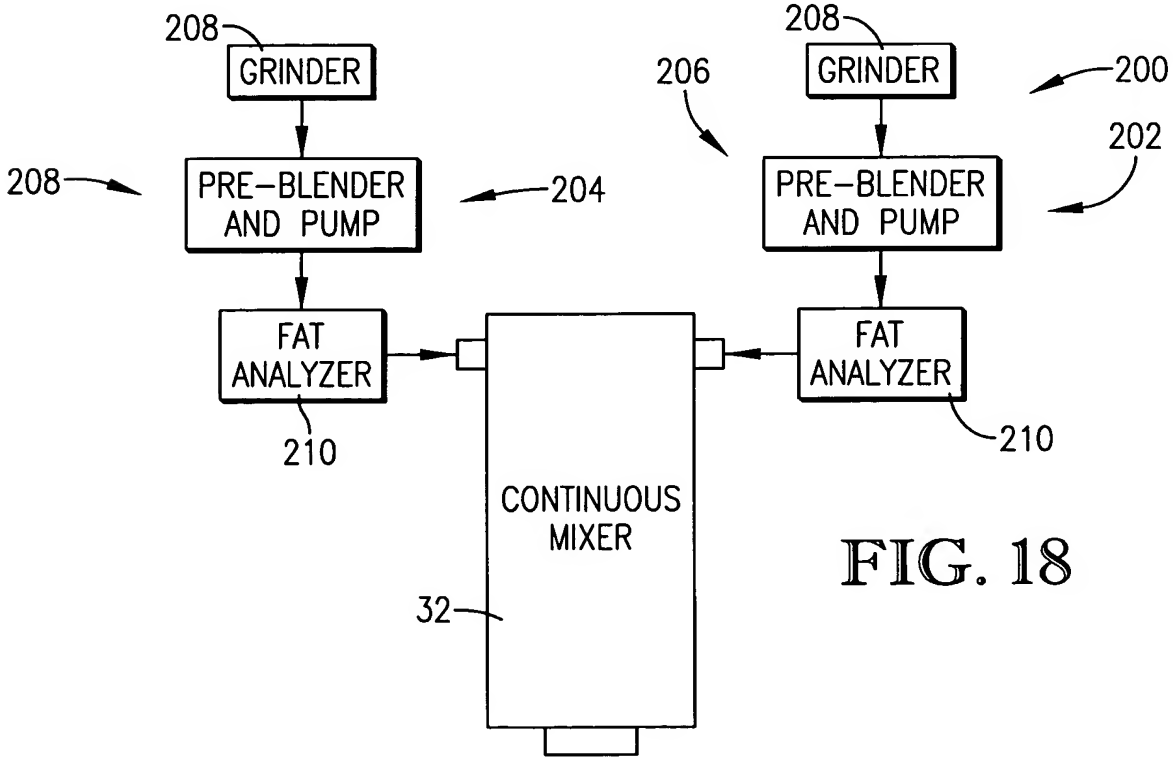
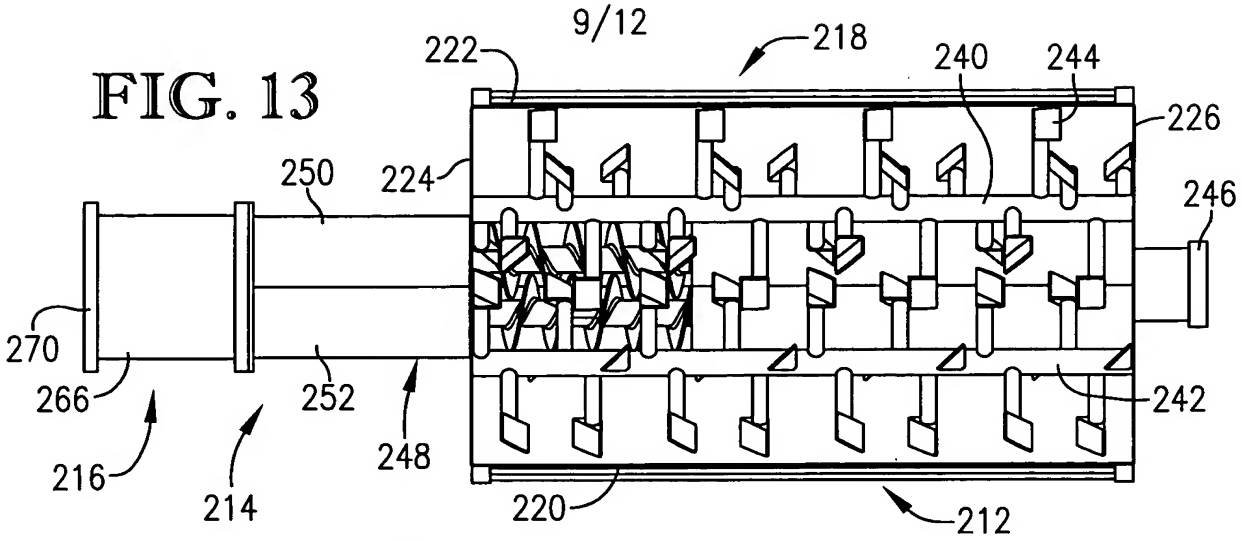

208
GRINDER
208
PRE-BLENDER AND PUMP
204
FAT ANALYZER
210
206
208
GRINDER
200
202
PRE-BLENDER AND PUMP
FAT ANALYZER
210
CONTINUOUS MIXER
32

FIG. 18

FIG. 13



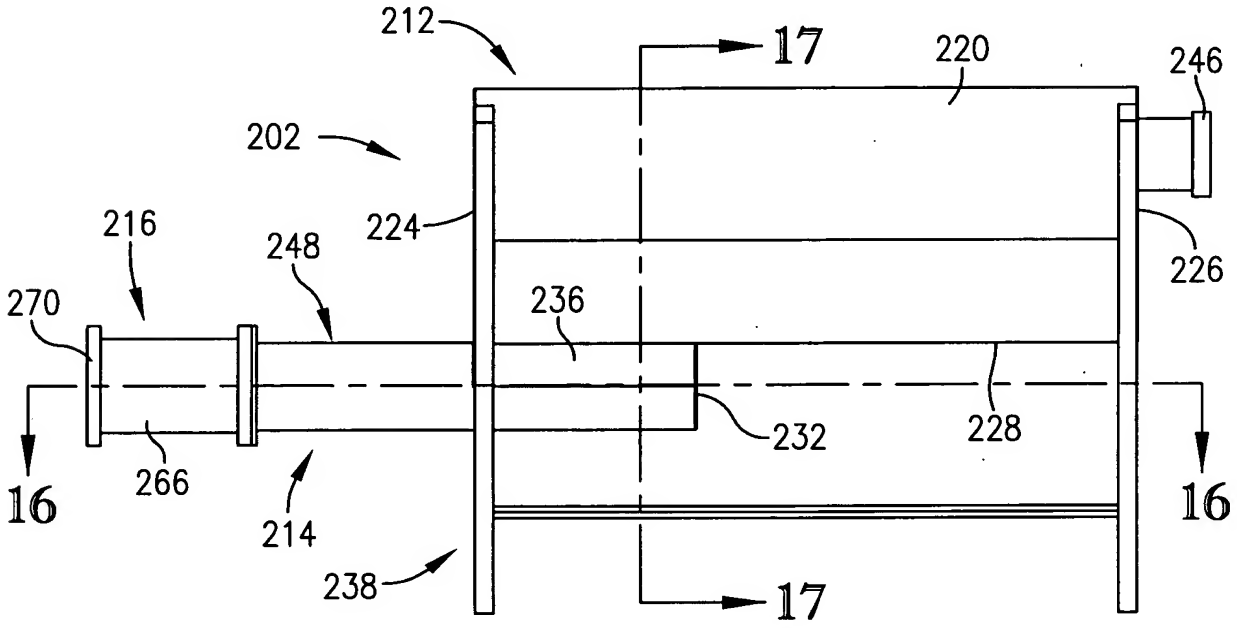


FIG. 12

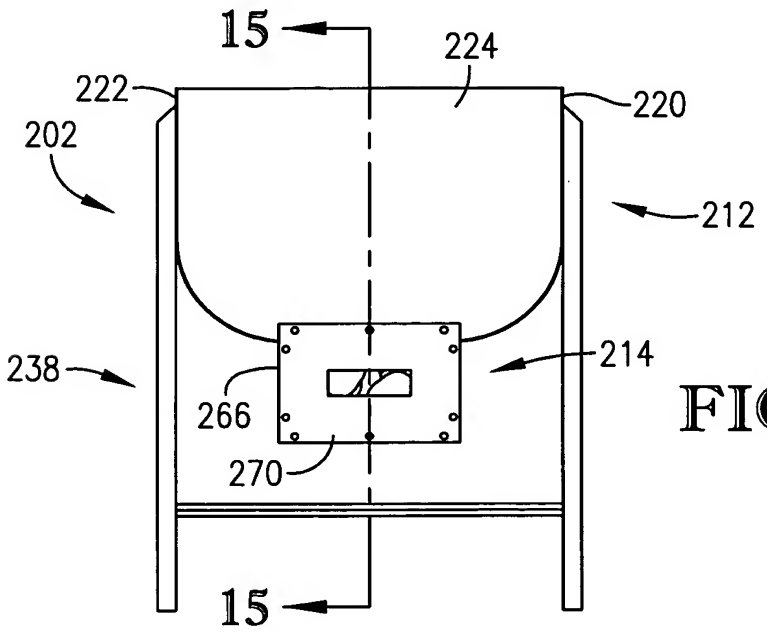


FIG. 14

FIG. 16

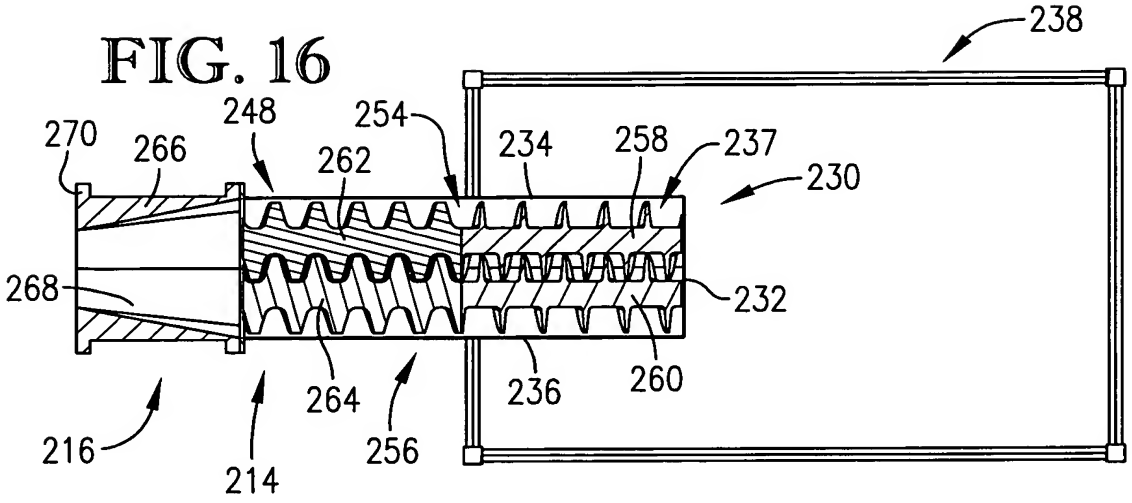
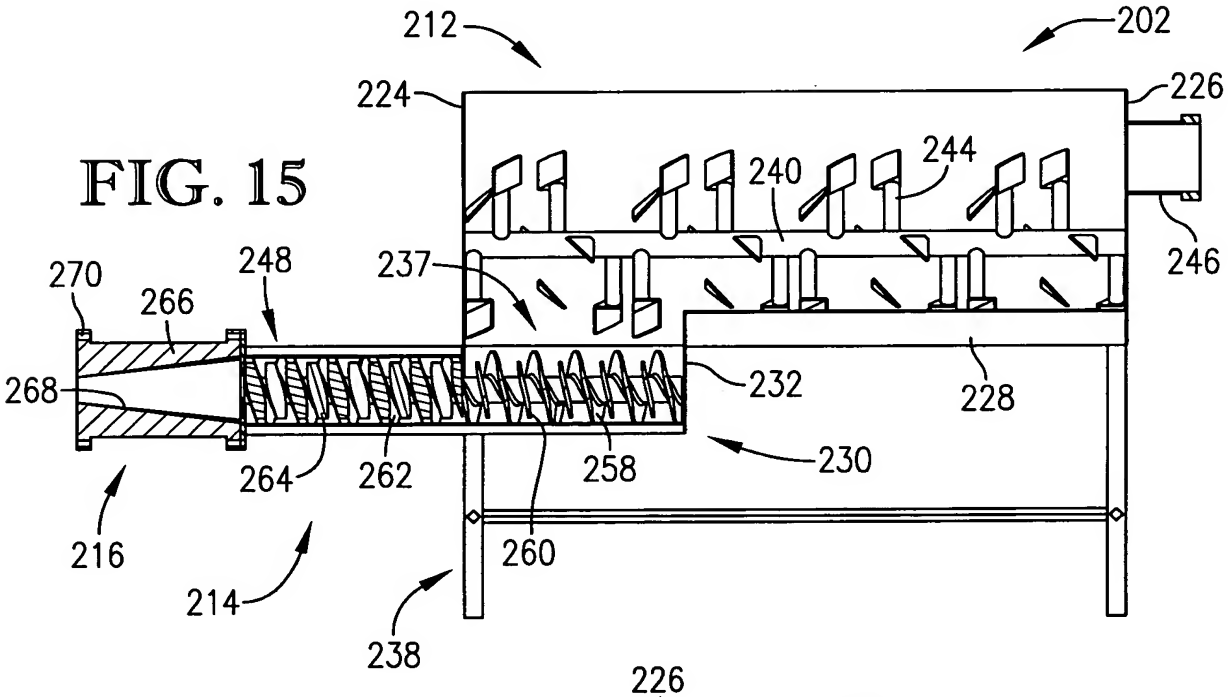


FIG. 15



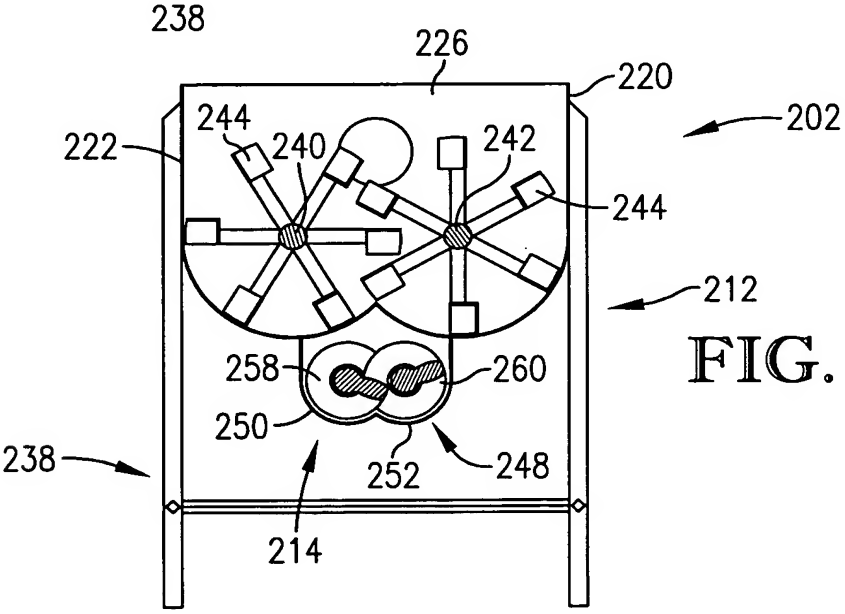
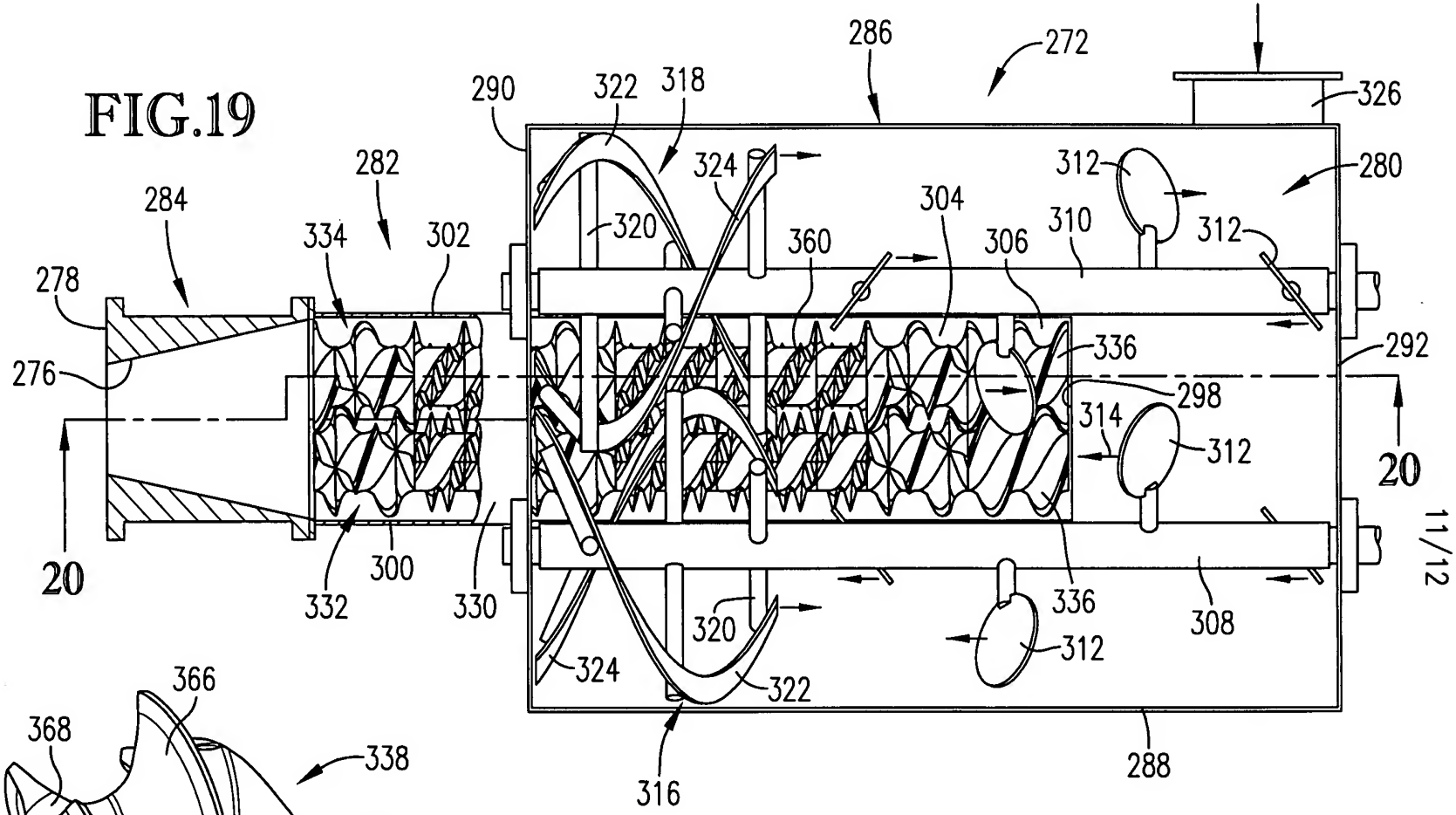


FIG. 17

FIG.19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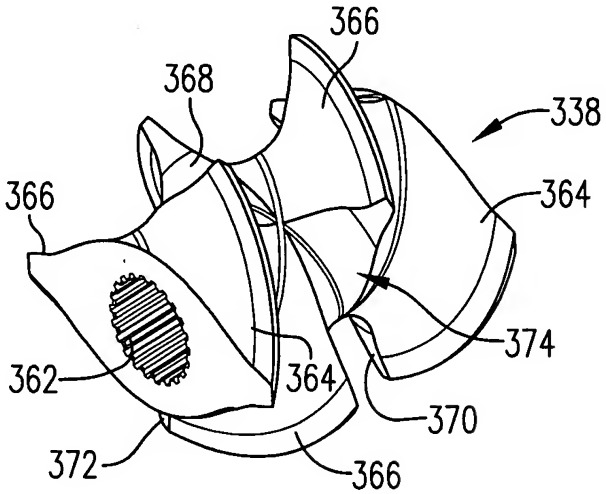
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FIG.22

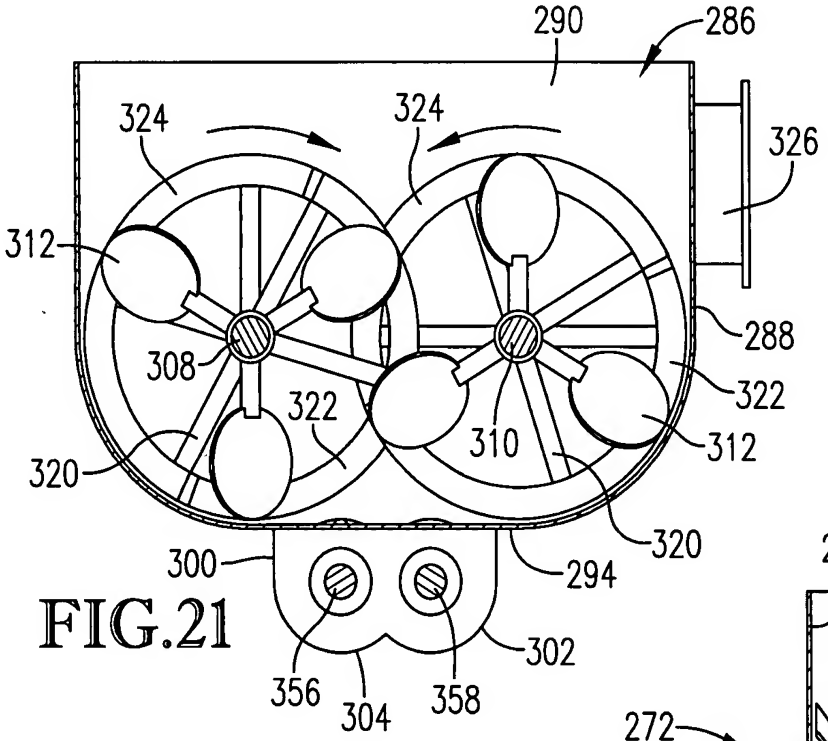

FIG.21

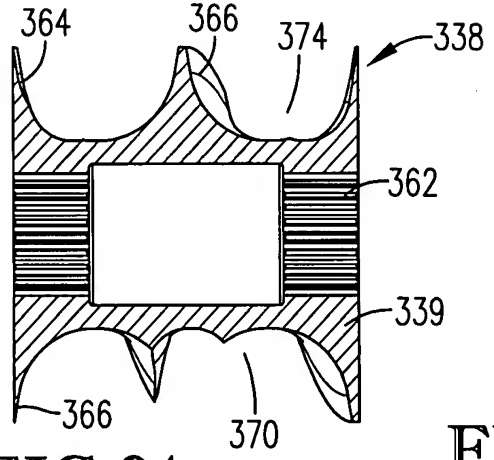

FIG.24

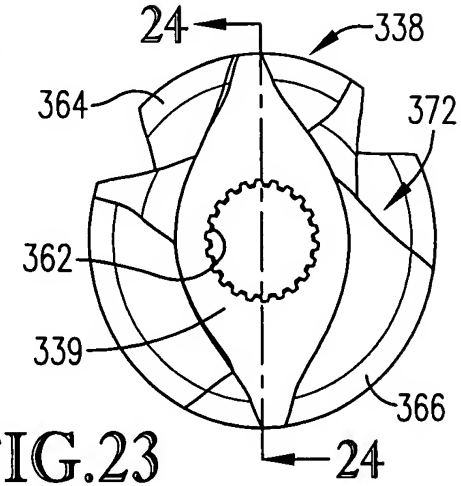

FIG.23

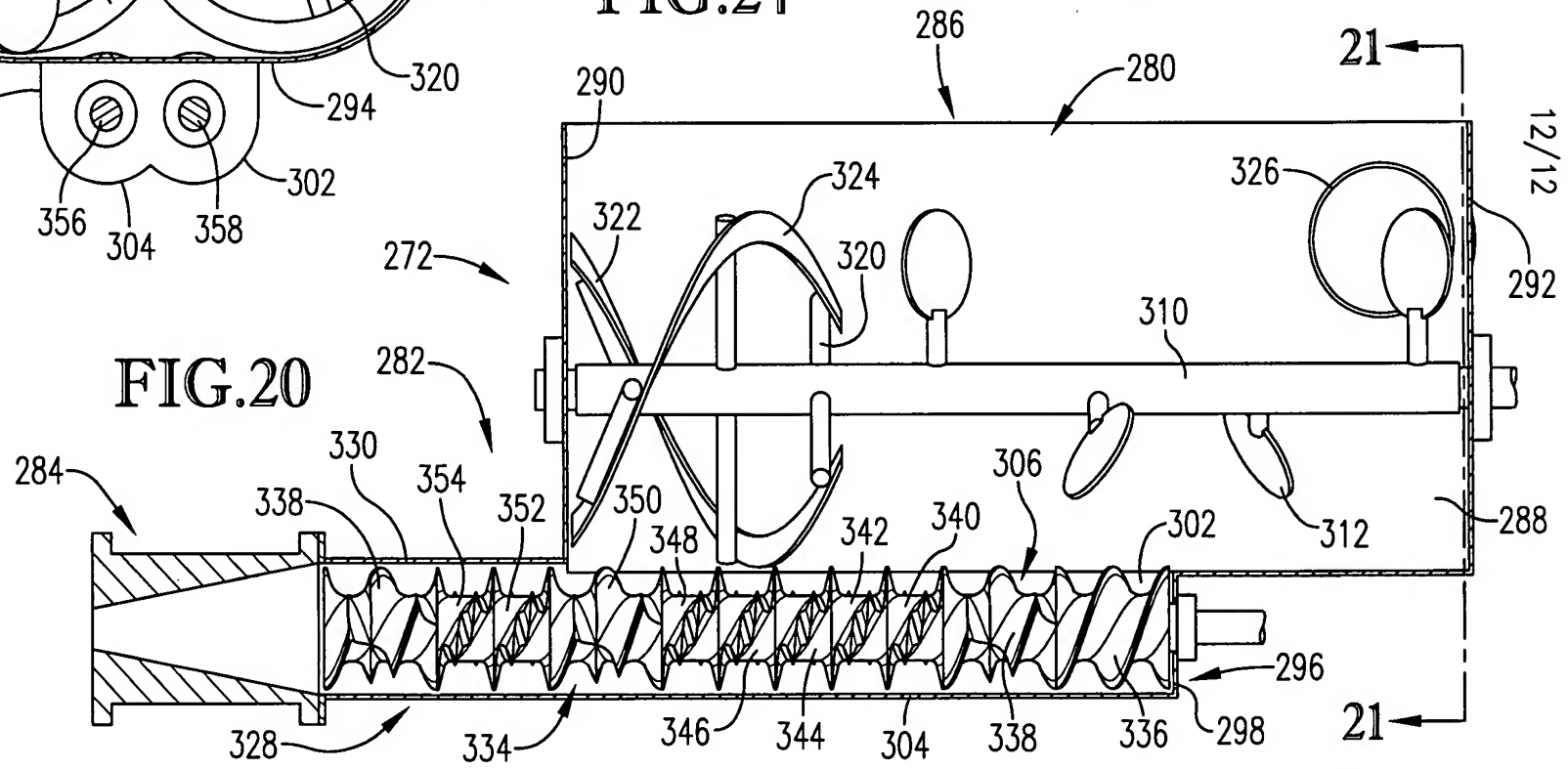

FIG.20